

Molecular identification of a mystery rail from Panama results in the first country record of King Rail *Rallus elegans*

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On 25 January 1985, a rail belonging to the King / Clapper *Rallus* spp. complex was observed by W. Martínez at the edge of a freshwater pond 37 km west of Chiriquí Grande, Bocas del Toro, Panama (Ridgely & Gwynne 1989). It was later caught using a mist-net and taken into captivity; the bird died shortly thereafter. The skin was prepared and deposited at the Academy of Natural Sciences, Philadelphia (ANSP 180686); unfortunately, the bird's sex was not recorded. It was identified as a Clapper Rail *R. longirostris sensu lato* but could not be identified to subspecies and was considered to possibly represent a new race (Ridgely & Gwynne 1989, Olson 1997). No other record of this form has been documented in Panama. The specimen is small relative to other members of the complex and has a bright rufous breast, a grey-and-rufous face, dark crown and boldly barred flanks. A mixture of worn and fresh feathers is present on the back; the fresh feathers are dark brown edged pale brown (Fig. 1).

We obtained a sample of a toepad from this specimen and extracted the DNA using a modified phenol-chloroform protocol to maximise yield (Blin & Stafford 1976). The DNA was heavily degraded and we were unable to amplify large fragments of mitochondrial DNA. We used internal primers to amplify and sequence eight small fragments of the mitochondrial gene ND2 following the methods of Maley & Brumfield (2013). We assembled the overlapping fragments using Geneious v. 8.1.8 (Biomatters Ltd., Newark) resulting in a total of 701 base pairs of ND2 sequence. We searched for similar sequences on GenBank using BLASTN 2.3.1 (Zhang *et al.* 2000).

We compared the sequence of the Panama specimen to sequences from 75 other specimens in the complex and found it was identical to that of a King Rail *R. elegans ramsdeni* specimen from Cuba, LSUMNS B-71232 (accession no. KP081567), at Louisiana State University Museum of Natural Sciences, Baton Rouge. This unique haplotype has been found nowhere else in the species' range (Maley & Brumfield 2013). It is not very divergent from King Rails from the eastern USA, but the haplotype was not found in birds from Florida, Illinois, Louisiana, Ohio and Oklahoma.

We examined the specimen alongside those of members of this complex from Cuba, the Yucatán Peninsula (Mexico), Honduras, Venezuela, Colombia and Ecuador. Of the specimens examined, the plumage pattern and colour is most similar to MCZ 89303 (Fig. 1). We also measured 52 specimens from the complex, including 12 of Cuban King Rails and found that the bird from Panama matched most closely with female Cuban King Rails. Measurements (in mm) of the Panama specimen with mean, range and sample size of female Cuban King Rails: wing chord = 144.9 (mean = 142.8, range 139.7–149.4, $n = 8$), exposed culmen = 49.6 (mean = 51.6, range 48.9–54.7, $n = 8$) and tarsus length = 46.2 (mean = 46.6, range 44.9–48.4, $n = 7$). The Panama specimen did not overlap in size for any measurement with male Cuban King Rails, which are considerably larger.

It seems odd that a bird would disperse more than 1,000 km across the Caribbean Sea from a sedentary population, but rails are well known for their extraordinary dispersal abilities (Renssen & Parker 1990). We believe the confusion over the identity of this



Figure 1. Dorsal and ventral photographs of three rail specimens at the Museum of Comparative Zoology, Cambridge, MA, for comparison: the bird on the left in both photographs is MCZ 80748 *Rallus crepitans leucophaeus* from the Isle of Pines, Cuba; that in the middle is ANSP 180686 from Panama; and that on the right is MCZ 89303 *Rallus elegans ramsdeni* from Ariguanabo Lagoon, Cuba (James M. Maley, © President and Fellows of Harvard College)

specimen can be attributed to the bird differing considerably in appearance from the nearest Caribbean populations in Colombia or the Yucatán Peninsula. This represents the only known record of a King Rail in Panama.

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The nest of Serra do Mar Tyrant-Manakin *Neopelma chrysolophum* with a brief review of nest architecture in the genera *Neopelma* and *Tyrannneutes*

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The genus *Neopelma*, P. L. Sclater, 1861, comprises a quintet of unprepossessing, dull-plumaged ‘manakin’ species of uncertain affinities, but whose closest relatives are generally considered to be the *Tyrannneutes* ‘manakins’. Rêgo *et al.* (2007), Tello *et al.* (2009) and McKay *et al.* (2010), in their molecular analyses of the Pipridae, found evidence to suggest that *Tyrannneutes* and *Neopelma* lie outwith the true manakins, but together they are sister taxa to the latter group. The same arrangement was proposed by Lanyon (1985), Prum *et al.* (2000) and Chesser (2004), but rejected by Prum & Lanyon’s (1989) study of syringeal morphology, nest architecture and plumage. To emphasise their unique position, Gill & Wright (2006) elected to use the genus’ scientific name as the English group name too, and Tello *et al.* (2009) erected a new subfamily, the Neopelminae, for these two genera, which arrangement was followed by Dickinson & Christidis (2014).

The five species with their largely allopatric ranges are: Saffron-crested Tyrant-Manakin *Neopelma chrysocephalum* (von Pelzeln, 1868) in north-east South America (south of the Orinoco River and north and east of the rio Negro), with an isolated and comparatively recently discovered population in north-east Peru; Sulphur-bellied Tyrant-Manakin *N. sulphureiventer* (Hellmayr, 1903) in south-west Amazonia; Pale-bellied Tyrant-Manakin *N. pallescens* (Lafresnaye, 1853) in eastern, central and southern Brazil, with small extensions into Bolivia, Guyana and Surinam; Wied’s Tyrant-Manakin *N. aurifrons* (zu Wied, 1831) in eastern Brazil, from southern Bahia to central Rio de Janeiro; and Serra do Mar Tyrant-Manakin *N. chrysolophum* Pinto, 1944, also in eastern Brazil, but generally at higher elevations and south of the range occupied by the previous species, from east-central Minas Gerais to southern São Paulo (Ridgely & Tudor 1994, Whitney *et al.* 1995, Robbins *et al.* 2004, Snow 2004, Kirwan & Green 2011).

Breeding data for the genus *Neopelma* are almost non-existent. Whitney *et al.* (1995) reported that Euler (1900: 44) had described the nest of what these authors assumed was probably *N. aurifrons* as being bag-shaped, like that of many tyrant flycatchers (Tyrannidae), and suspended below the overhang of a bank, from near Cantagalo, Rio de Janeiro state, south-east Brazil, in the mid 1860s. Based on the translation of Euler’s description presented by Whitney *et al.* (1995), under the system for describing the nests of Neotropical birds proposed by Simon & Pacheco (2005), the nest was of the closed / long / pensile type. However, it is unclear as to whether Euler really did collect *N. aurifrons* at this